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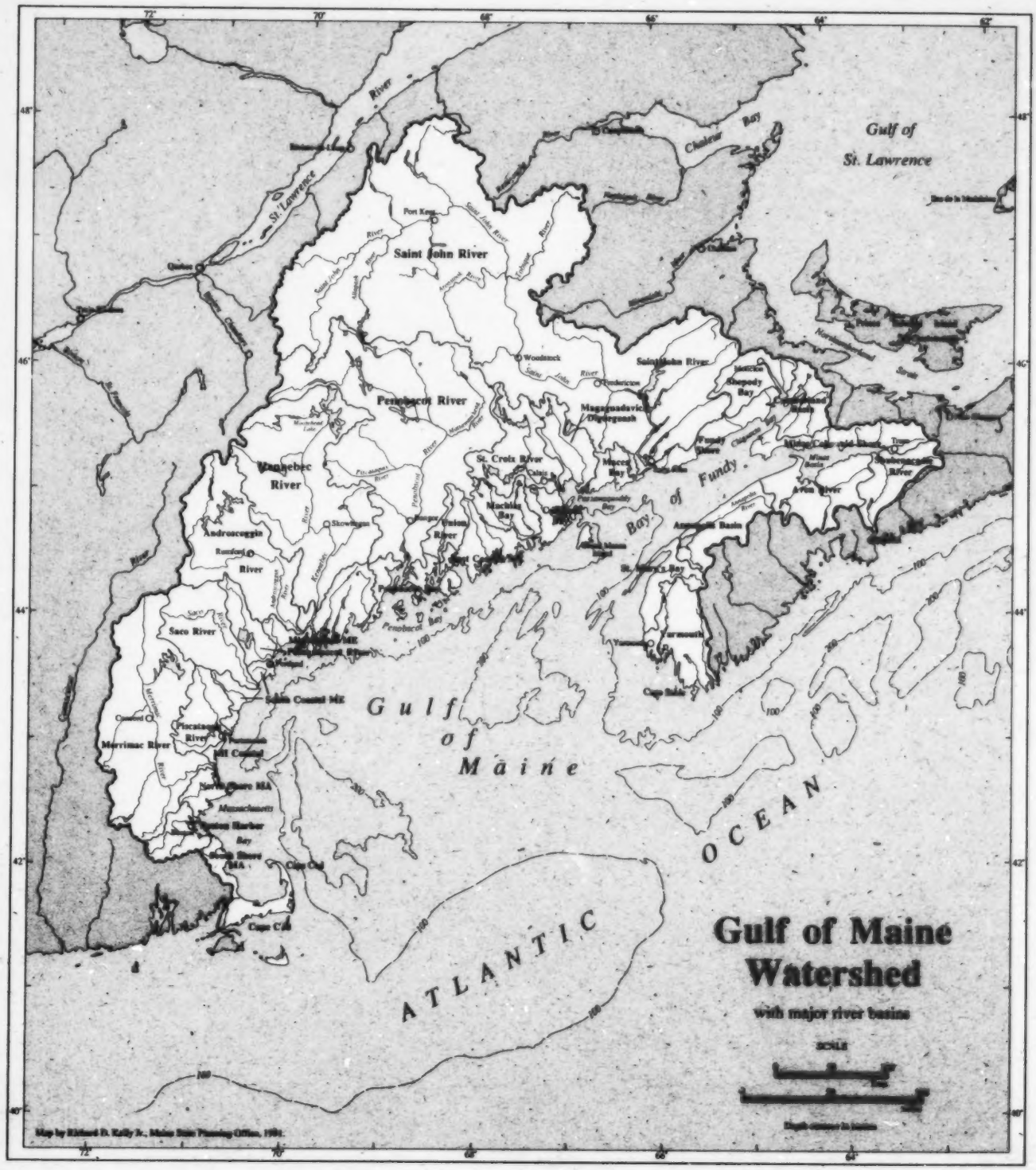

Gulf of
St. Lawrence
Saint John River
Penobscot River
Kennebec
River
Androscoggin
River
Saco River
Merrimac River
St. Croix River
Machias
Bay
Passamaquoddy
Bay
Bay of Fundy
Gulf
of
Maine
OCEAN
ATLANTIC
Gulf of Maine
Watershed
with major river basins
SCALE
Map by Richard D. Kelly Jr., Maine State Planning Office, 1991.

Letter From the Chairman

The first year of the Gulf of Maine Program can only be characterized as exciting. The Council on the Marine Environment can look back over these months at a growing number of projects, all of which reflect state and provincial concern for the Gulf of Maine.

Development of a ten-year Gulf Action Plan stands as one of the principal activities of the Council during this year. This document, painstakingly created by representatives from each state and province and reviewed by numerous individuals and organizations around the Gulf, outlines critical areas on which to focus our collective efforts. Given the present healthy state of the Gulf of Maine, we should take pride in this preventative approach toward environmental protection.

Design of a regional Marine Environmental Quality Monitoring Program was another important milestone of our first year. Creation of the monitoring program was the result of extensive cooperation among U.S. and Canadian scientists; review and revision of the plan required a formidable amount of time on the part of all involved parties. The start of a small monitoring pilot project in Gulf waters is the first step in increasing our understanding of this complex ecological system.

Within the Gulf region a multitude of data and information has been generated by universities, laboratories, federal, state, and provincial agencies. Yet, accessing that data is often a frustrating process, both for scientists and environmental managers. In response, the Council is devising a regional data and information management system. A Council committee, comprised of federal, provincial and state officials versed in this field, is overseeing the design of the regional system.

The goal of fostering communication on Gulf issues of common concern has been pursued by the Council in variety of ways over the year:

A successful workshop on the environmental effects of finfish culture was held in New Brunswick in March 1990, drawing participants from throughout the region. A workshop focusing on Gulf monitoring priorities took place in Halifax in May 1990, as part of development of the monitoring plan. A three-day science workshop, held in Massachusetts in January 1991, concentrated on the natural variability of the Gulf of Maine and the relationship between the needs of scientists and managers. Approximately 200 scientists, academicians, and planning and policy officials attended that meeting.

The Council is pursuing other activities considered important to Gulf Program goals. A long-term education and participation program is being formulated and will be finalized during our next year. Audiovisual materials, Gulf brochures, and a satellite photo poster have been produced for use by agencies, environmental organizations, and local communities.

The Council has researched public and private sources of sustained funding for the Gulf Program and will be considering creation of a non-profit organization during the upcoming year. A Canadian legislative study on Gulf-related laws, which will mesh with the completed study of U.S. laws, will be undertaken by Dalhousie University. In summary, we are collectively embarking on a long-term regional environmental program, a program unique in both its international aspect and in its preventive focus.

Council Highlights 1990

July

Gulfwide Shoreline Cleanup wins national award in US

Gulf of Maine satellite photo poster produced

August

Environmental impacts of finfish culture workshop *Proceedings* released

NMFS initiates habitat mitigation study for Gulf Program

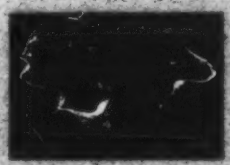
September

New England states receive $97,000 federal grant from NOAA for Gulf Program

Edmund S. Muskie Institute and state of Maine initiate non-governmental funding research

Working Group meets

October



Gulf Program receives $250,000 grant for Gulf Data and Information Management system

Gulf Marine Environmental Monitoring Program receives $30,000 funding for pilot project

November

Council on Marine Environment holds second meeting in Ogunquit, Maine

Draft Action Plan approved for public release

Working Group meets

December

Gulf Program finance network and education and participation task forces created

Canadian Green Plan released

1991

January

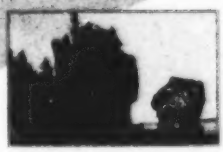
Gulf Science Workshop held in Woods Hole, Massachusetts

NMFS Habitat Mitigation report released

Non-governmental sources of funding report released

Working Group meets

February



Monitoring Program implementation strategy drafted, reviewed

March

Action Plan comments reviewed, Plan revised

EPA and Congressional staff briefed on Gulf Program activities

Education and Participation meets

Working Group meets

April

Gulf Program awarded $15,000 grant from EPA

Financial Network and Education and Participation Task Forces meet

NOAA staff briefing on Gulf Program held in Washington

May

Task Forces' recommendations in final draft form

Action Plan revisions completed

Gulf-wide electronic bulletin board system outlined

June

Gulfwatch field sampling protocol workshops held

Working Group meets

Council Meetings

The first meeting of the Gulf Council

was held in June, 1990, in Halifax, Nova Scotia. The provincial Department of the Environment and the Department of Fisheries acted as hosts for the day-long meeting and evening reception.

During this meeting, the Council discussed and adopted operating guidelines, including voting procedures and Council dues. The Council voted to appoint Richard Silkman, Director of the Maine State Planning Office, as the 1990–91 Chair of the Council. The state of Maine thus assumed Secretariat responsibilities for the ensuing year. New Brunswick volunteered to serve as chair and Secretariat for the following year.

A draft outline of the Gulf of Maine Action Plan was presented to the Council in June. Extensive review of the outline led to Council approval of the draft, with further review scheduled before public release in the fall.

The Council also considered the draft Marine Environmental Quality Monitoring Program. The draft monitoring plan and anticipated pilot project were both approved by the Council, with a projected start-up date in 1991.

The second Council meeting

took place in November, 1991, in Ogunquit, Maine, hosted by the Maine State Planning Office. Highpoints of the meeting included approval of the draft Action Plan for public release and final approval of the format and budget for the regional monitoring program.

Members reviewed the 1990–91 Work Plan and Annual Budget. They approved a $450,000 budget for the year, focusing on completing existing projects and initiating financial and public outreach planning. The Council suggested that Environment Canada and the federal Department of Fisheries and Oceans be asked to contribute an amount to the Gulf Program, similar to contributions from the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration, which was provided in the following months.

Completed 1990–91 Work Plan Tasks

Program Planning

- completed 10-year Gulf Action Plan for presentation to Council in 1991
- developed and adopted 1991–92 Work Plan and Budget
- completed interjurisdictional analysis of Gulf legal regime in the U.S. states

Program Implementation

- started monitoring program with *Gulfwatch* pilot project
- developed Action Plan implementation strategy
- began research into the design of a Data and Information Management system

Fiscal Management

- evaluated non-governmental funding options for Gulf Program
- provided secretarial support and materials
- evaluated and made recommendations regarding non-governmental sources of funding; created financial task force

Public Education and Outreach

- formed task force on education and participation
- expanded Gulf Program newsletter
- completed *Gulflinks*, a directory of Gulf organizations
- produced and distributed Gulf of Maine Program brochure throughout the region

Public Outreach Efforts

The Council is charged by the 1989 Gulf of Maine Agreement to improve the exchange of information among the states and provinces. During the year, the Council was involved in a number of professional conferences and workshops devoted to improved understanding of the Gulf. The following is an abridged list of some of these gatherings:

"Massachusetts Bays Symposium"
University of Massachusetts, Boston, Spring, 1990

New England Environmental Conference
Tufts University, Medford, Massachusetts, March 1990 and 1991.

"Casco Bay Estuary Project Workshop"
Environmental Protection Agency, Maine, fall, 1990.

Presentation at the annual New England Governors–Eastern Canadian Premiers meeting
Mystic, Connecticut, June, 1990.

"Toxicology Workshop"
Vancouver, BC, November, 1990.

"Natural Variability in the Gulf of Maine—a Workshop"
Woods Hole, Massachusetts, January 1991.

"An Overview of the Gulf of Maine Program," at the National Marine Fisheries Service's workshop on Habitat Protection Strategies, March, 1991.

Presentation to the North American Marine Mammals Association
Boston, Mass., April, 1991.

To foster public recognition of the Gulf of Maine water body, and to improve understanding of the stresses upon it, the Council produced an array of general outreach materials. Reprints of an article on the Gulf from the *Maine Boats and Harbors* magazine have been distributed throughout the region. The original Gulf *Report* has proved to be so popular that there is need to reprint the publication. The Council produced a small public brochure that informs the reader of the Gulf's unique traits and the stresses facing it.

In addition, the Gulf Program newsletter, *Turning the Tide*, was revamped in 1991, increasing from four to six issues yearly and from four to eight pages, and refocusing its content on key Gulf issues and programs. The mailing list for the newsletter increased to over 1700 readers in the United States and Canada. Finally, the Council is creating a slideshow for use by community groups, trade associations or business organizations, that illustrates the environmental and economic importance of the Gulf and provides an overview of the Council's functions.

Summary of Gulf-related Events

Canada's Green Plan

In December, 1990, the long-anticipated Canadian Green Plan was released. The aim of the Plan is to make Canada the world's most "environmentally friendly" nation by the year 2000. The document outlines policies and actions the government proposes to assure clean Canadian air, waters, and land. The Plan initially commits $3 billion over five years to more than 100 specific initiatives. The final document reflects an exhaustive public comment process that generated 500 specific recommendations on the Plan from Canadians.

Noting that Canada has the largest coastline in the world, the Green Plan addresses critical coastal and marine issues. On the Atlantic coast, including the Bay of Fundy, the Green Plan calls for a clean-up of major harbors and a planning process for improvement of valuable estuaries. Subsequently, in March, 1991, Environment Canada announced the creation of the Atlantic Coastal Action Plan program. The program will commit $10 million over six years to selected sites along the Atlantic coast. Four of the nominated sites lie within the Bay of Fundy: L'Etang estuary, St. John harbor, the St. Croix River estuary, and the Annapolis River estuary. The money will foster a community-based planning process involving community leaders, local officials and Environment Canada staff in development of an action plan that identifies specific problems, appropriate solutions and a schedule for implementation. These plans are to be completed within five years.

Provincial Round Tables

For over two years, Nova Scotia and New Brunswick have been working on a plan to reconcile environmental protection with sustainable economic development. Each province set up a Round Table on Environment and Economy to devise a plan with specific recommendations for promoting sustainable development. The Round Tables are noteworthy, for they include industry, environmental organizations, government, and citizens. Initial reports from the two Round Tables concentrated on actions the provincial agencies could pursue to integrate environmental considerations into existing decision-making structures. With comparable industry and private-sector plans completed, the provinces will have a good vision of how sustainable development could be achieved within their region.

St. Croix International Waterway Commission Plan

The St. Croix International Waterway Commission was created in 1989 by New Brunswick and Maine in order to work together to protect and manage the St. Croix's resources. The Commission spent 18 months drafting a Plan for Longterm Cooperative Management of the St. Croix International Waterway (the Plan). Working in consultation with local and governmental interests in New Brunswick and Maine, the Commission finished the first draft of the Plan in 1990.

The central theme of the Plan is its vision of the St. Croix as an International Heritage Waterway. The theme is a logical extension of existing recognition of the St. Croix by Maine and New Brunswick: New Brunswick nominated the river as a national Canadian Heritage River and Maine named it as one of the state's twenty most outstanding rivers. Using this theme and five management goals, the Plan lays out specific policies and actions relating to the Environmental Setting, Human Heritage, Natural Heritage, Recreational Heritage, Economic Development, and Waterway Management. State, provincial, and federal agencies are developing strategies to incorporate the policies and recommendations of the Plan into departmental activities.

The Clean Annapolis River Project (CARP)

The Clean Annapolis River Project grew from the concern for the Nova Scotian river of a consortium of public and private professionals, known as the Atlantic Estuaries Cooperative Venture. CARP was formed following the selection of the River system as a pilot remediation project by the Cooperative Venture. The purpose of CARP, a non-profit community corporation, is to promote the sustainable use of the Annapolis River estuary and its watershed. The organization uses a project team approach to tackle specific projects. Individuals and organizations with a particular interest work on issues such as environmental education, wetlands protection, streambank reforestation, or community water and energy conservation projects.

Nova Scotia Clean Water Task Force

In June, 1991, the final report and recommendations of the Nova Scotia Minister of Environment's Clean Water Task Force were released. The report contains a number of recommendations concerning land-based sources of pollution which will affect Nova Scotia's estuarine and coastal environmental quality. The Department of Environment plans to pursue a program of legislative policy initiatives as a result of the report, that will have a constructive impact on the province's marine environment and, by extension, the Gulf of Maine as a whole.

Nova Scotia Voluntary Planning Coastal Report

In Nova Scotia, the Environment and Economy Committee of Voluntary Planning produced a report entitled "Towards Sustainable Development in Coastal Areas." The report presents a broad-based view of an array of coastal management issues in a case study format as well as recommendations regarding successful solutions to coastal conflicts. The Deputy Ministers' Land Use Committee adopted the report; its recommendations will be implemented under the leadership of the provincial Department of Environment.

The Great Bay Watch

In New Hampshire, a citizen's water quality monitoring group was begun in 1990 by the New Hampshire Sea Grant Extension Program. The Extension Program, part of the state university system, enlisted 40 volunteers to sample within the Great Bay estuary. Initially beginning with nine stations, the volunteers were trained to sample each station twice a month for pH, salinity, temperature, dissolved oxygen and water clarity. The volunteers, known as the Great Bay Watchers, plan to conduct shoreline surveys around the bay to identify existing and probable point and non-point source pollution.

A tenth sampling site was added on the Piscataqua River, which leads into the Great Bay. This site is tested for the same parameters as the other nine, as well as for nutrients and microbiological factors. The data from the volunteers' efforts is used by the University's Jackson Estuarine Laboratory, which is compiling a water quality profile of the Great Bay estuary.

Stellwagen Bank Marine Sanctuary Designation

The National Oceanic and Atmospheric Administration (NOAA) has been considering Stellwagen Bank, off the coast of Massachusetts, for designation as a national marine sanctuary. In the process of considering designation, a draft Environmental Impact Statement and Management Plan was issued by NOAA during the past year for public and agency review.

Stellwagen Bank forms the eastern boundary of Massachusetts Bay, and is a significant regional marine resource. Twelve species of marine mammals, including the endangered right whale, frequent the Bank. Their presence supports a whale-watching industry that is estimated to generate $23 million annually. In addition, extensive use of Stellwagen bank is made by commercial and recreational fishing interests, which generate millions of dollars to the New England economy. In reviewing the draft Statement and Plan, the state of Massachusetts has recommended a joint federal-state management program, since the state has such a significant interest in the management of this important regional resource.

Casco Bay and Massachusetts Bay National Estuary Programs

In April, 1990, Casco Bay and Massachusetts Bay were added to the National Estuary Program of the Environmental Protection Agency. As a result, federal and state funds are being used to create a planning and management program for each bay, culminating at the end of five years in separate Comprehensive Conservation and Management Plans.

Massachusetts Bay encompasses all of Cape Cod Bay and two of the most polluted harbors in the United States — Boston and Salem. The Bay's circulation is strongly influenced by discharges from river systems, including the Merrimack in Massachusetts and the Androscoggin and Kennebec Rivers in Maine. Over 1.5 million people live along the shore of Massachusetts Bay and have a decided effect on its water quality. Preliminary results of an investigation of the non-point sources of pollution to Massachusetts Bay indicate that over 2.6 million gallons of oil is discharged annually into Massachusetts and Cape Cod bays in the form of non-point source pollution. EPA will contribute $1 million each year to analyze all sources of pollution to the bay and to develop the final management plan.

In Casco Bay, the situation is different. Concern for the bay had grown after testing by a federal agency turned up high levels of metals and PCBs in fish sampled there. By most estimates, the bay is healthy. However, this test brought home the fact that Portland and surrounding towns needed to act to maintain the quality of the bay's water and resources. In designating Casco Bay a National Estuary, EPA noted the preventative focus put forth by the state of Maine in its application. Maine will receive $500,000 annually to pursue scientific studies, education initiatives, and to develop their management plan.

Outlook for the Future

Monitoring Program

The Council completed the design of a regional marine environmental quality monitoring plan in November, 1990. The plan is intended to meet three goals:

1. To provide information on the status, trends, and sources of risks to the marine environment of the Gulf of Maine;

2. To provide information on the status, trends, and sources of marine-based human health risks in the Gulf of Maine;

3. To provide appropriate and timely information to environmental and resource managers that will allow both efficient and effective management action and evaluation of such action.

The Council recognizes that implementation of this Gulf-wide program will require definition of many details, such as monitoring methodologies, acceptable levels of precision and accuracy, and development of sampling designs. It is anticipated that several ad hoc committees of monitoring practitioners will develop from the monitoring plan to identify specific means of achieving the objectives within the plan.

The final plan gives a range of estimated costs to monitor appropriate variables within the Gulf system. These estimates range from $3 million annually to monitor a broad range of environmental change indicators to $560,000 annually to assess human health risks from mercury and PCBs. The costs presume that private firms will do the work. The monitoring plan is predicated, however, on the assumption that regional monitoring can be accomplished with augmented testing through established U.S. and Canadian programs. While there is a clear need to arrange constant funding to implement the entire monitoring plan, it is anticipated that initially the program will grow incrementally.

Gulfwatch

The Gulf Monitoring Plan calls for identification of key tasks which, once completed, would implement the larger plan. In 1990, the Council approved a small-scale pilot project using blue mussels as an indicator species, which was designed to involve all the jurisdictions The Council appropriated $36,000 for the pilot project, known as *Gulfwatch*.

Gulfwatch was designed by the Council's Monitoring Committee to meet two objectives: to determine the existing level of logistical cooperation among the jurisdictions and recommend measures to strengthen that cooperation, and to evaluate the feasibility of using a mussel watch approach as one means of Gulf-wide environmental assessment. The Monitoring Committee recognizes that the value of the pilot project is not in its ability to assess environmental health based on a single year's sampling, but rather in its function as a necessary critique of the overall Monitoring Plan.

Deployment of the mussel cages in waters of the five jurisdictions will take place in the summer of 1991. To date, *Gulfwatch* has displayed a remarkable level of cooperation among the agencies involved. The U.S. Environmental Protection Agency is contributing the mussel cages to each state and province and will supply the protocol for cage deployment. The Canadian Wildlife Service will collect continuous information on mussel growth on Machias Seal Island. The U.S. National Oceanic and Atmospheric Administration will be involved in Quality Assurance/Quality Control protocols. Environment Canada will coordinate *Gulfwatch* activities with the Canadian Mussel Watch Program. The Maine Department of Environmental Protection will be responsible for laboratory analyses of heavy metals. Mooring gear, boats, and travel funds will be supplied by each jurisdiction. Data compilation and labo. tory analyses will be completed by the end of the fall, with a final report due by March, 1992.

Gulf of Maine Action Plan

As the 1990-91 fiscal year drew to a close, the Gulf of Maine Action Plan emerged in final form. The Plan is the product of 18 months of effort by state, provincial and federal agencies, as well as environmental organizations and associations from throughout the region. It represents an impressive initiative by the bordering states and provinces to take appropriate steps to prevent future harm to the great natural resource they all share.

Defining the goals of a plan designed to prevent rather than mitigate harm was a daunting task. The Gulf of Maine Working Group ultimately agreed upon goals in five issue areas: Research and Monitoring; Coastal and Marine Pollution; Habitat Protection; Education and Participation; and Protection of Public Health. The goals were reviewed and approved by the Council in June, 1990, before the objectives and specific actions were added during the summer. The Council reviewed the first draft of the Plan in November then sent it out for three months of public review. Nearly 100 comments were received from individuals, agencies, and organizations in every jurisdiction. The Working Group used those comments in its final revision of the Plan, to be presented to the Council in July, 1991.

Within the Plan seven high priority objectives were identified:

1. generation of appropriate and timely monitoring information to environmental and resource managers and the general public;
2. reduction of impacts from point source pollution to the Gulf;
3. facilitation of regional efforts to assure proper disposal of debris and vessel wastes in the marine environment of the Gulf;
4. evaluation of existing laws and regulations regarding Gulf natural resources;
5. reduction of impacts from non-point source pollution to the Gulf;
6. protection, restoration and enhancement of fish and wildlife habitat within the Gulf region;
7. development and implementation of a regional citizens' education and participation program.

The Council will be working with federal, state, and provincial agencies and private organizations to achieve these objectives over the next three years. Certain actions may be taken by the Council itself during the upcoming year.

Committee Products

Data and Information Management Committee

The Data and Information Management committee was created by the Council in November, 1990, to begin design of a regional system that would allow researchers and managers in each jurisdiction access to Gulf data and information. The Council received a $250,000 grant from the U.S. government to pursue this goal.

The committee is chaired by the Massachusetts Coastal Zone Management Office and is comprised of individuals expert in the field of data management. During the past year, the committee assessed the data and information needs of potential system users in each state and province and began to determine sources of current and historic Gulf data. In addition, the committee established a regional electronic bulletin board and mail service, for use by agencies involved in the Gulf Program.

Financial Network

During 1990, the Council hired an intern from the Muskie Institute of Public Affairs in Maine to research and make recommendations on non-governmental sources of funding for the Gulf Program. The Council also established a temporary Finance Network, to review those recommendations and make specific proposals to the Council by July, 1991.

The Network, drawing upon the expertise of its private and governmental members, has considered likely sources of private funding, U.S. and Canadian tax law restrictions, and specific short and long-term needs of the Program. It is anticipated that the Network will recommend to the Council establishment of a regional non-profit entity to solicit public and private funds for the Program.

Education and Participation Task Force

During 1990–91, the Council turned its attention to the education and participation element of the Gulf Program. A Task Force was created to develop recommendations on a Gulf education and participation program. The Task Force brought together educators and communicators from state, provincial and federal agencies, as well as representatives of private organizations.

The Education and Participation Task Force has identified education messages to convey to specific sectors of the public. Their recommendations will focus on methods to bring the public into the Gulf Program, ways to promote public recognition of the Gulf of Maine and the Program, and possible policies for the Council to adopt regarding public dissemination of Gulf research results.

This past year illustrates that the Gulf Program is expanding at a rapid pace. Concern that the proliferation of committees and projects will add undue complexity to the regional program must be tempered by the knowledge that the Gulf is itself a complex system. A program to prevent harm to the Gulf ecosystem through coordinated and compatible management initiatives will necessarily develop a complexity equal to that of the marine system under scrutiny. Our challenge is to move beyond a tentative, piecemeal approach to marine management and to begin to "think like an ecosystem." Even the most fervent optimist would not state that the Gulf of Maine as we know and value it will remain in its relatively healthy state forever. It is imperative that we bring to the Gulf Program a full array of skills and techniques in order forestall irreversible harm to the Gulf of Maine and to ourselves.